



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Diploma in Mechanical Engineering

SEMESTER II

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM	MST	Q/A	END SEM	Q/A				
DTMA201N		APPLIED MATHEMATICS-II	60	20	20	0	0	3	0	0	3

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

* **Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 20 marks.

Course Educational Objectives (CEOs):

To introduce the students to the fundamentals of Engineering Mathematics.

Course Outcomes (COs):

After the successful completion of this course students will be able to:

1. Understand the concept of determinant and matrices.
2. Know the fundamental concept of coordinate geometry.
3. Understand the concept of differential calculus.
4. Know the fundamental principle of vector algebra.

Syllabus

Unit - 1

Determinant: Introduction, Minor and Cofactors, Study properties of determinants, Applications of Determinants (Area of Triangle and Cramer's rule).

Unit - II

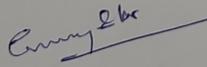
Matrices: Introduction, Types of matrices, Addition and subtraction of matrices, Scalar multiplication of matrices, multiplication of matrices, adjoint of a matrix.

Unit - III

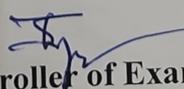
Coordinate Geometry: Introduction, Distance formula of two points, section formula, Area of a triangle, condition for collinearity, Equation of straight line (slope intercept form, point slope form, two point slope form), angle between two straight lines.


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			END SEM	MST	Q/A	END SEM	Q/A				
DTMA201N		APPLIED MATHEMATICS-II	60	20	20	0	0	3	0	0	3

Unit – IV

Differentiation: Introduction, Fundamental rule for differentiation, differential coefficient of product of two functions, differential coefficient of quotient of two functions.

Unit – V

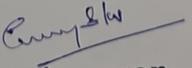
Vector Algebra: Concept of vector and scalar quantities, different types of vectors, addition of vectors, subtraction of vectors, multiplication of vectors (dot and cross product), applications.

Reference Books:

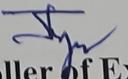
1. B.K. Paul, Diploma Engineering Mathematics (Vol-1), U.N. Dhār & Sons
2. G.P. Samanta, a Text Book of Diploma Engineering Mathematics, Volume-1, Learning Press.
3. Dr. S. Bose & S. Saha, A Complete Text Book of Mathematics, Lakshmi Prakasan
4. H.S. Hall & S.R. Knight, Higher Algebra Book Palace, New Delhi
5. S.L. Loney, Trigonometry S. Chand & Co.
6. H.K. Dass Engineering Mathematics S. Chand & Co.
7. B.K. Pal, K. Das, Engineering Mathematics, Volume-1, U.N. Dhar & Sons
8. B.C. Das & B.N. Mukherjee, Differential Calculus U.N. Dhar & Sons


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Choice Based Credit System (CBCS) in the light of NEP-2020
Diploma
(2024-2027)

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
DTCE 101	BEC	Applied Mechanics	60	20	20	30	20	2	1	2	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit.

*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

The students (A) will be Able to familiarize with different branches of mechanics (B) with emphasis on their analysis and application to practical engineering problems(C) efficiently & effectively (D)

Course Outcomes (COs):

The students will be able to

1. To apply knowledge of mathematics, science in engineering.
2. To identify, formulate, and solve engineering problems.
3. Demonstrate various types of forces and their analysis.
4. Demonstrate centre of gravity and moment of inertia determination of different geometrical shapes.

Syllabus:

UNIT I

08 Hrs.

Static and Dynamic Forces: Introduction to Engineering Mechanics; Classification of Engineering Mechanics; Statistics, Dynamics, Kinematics, Kinetics etc.; Fundamental Laws of Mechanics.

UNIT II

09 Hrs.

Law of Forces: Force, Pressure and Stress; Free body diagram; Bow's Notation; Characteristics and effects of a force; System of forces, Resolution of a force, Composition of forces, Resultant/equilibrant force; Law of Parallelogram of Forces, Law of Triangle of Forces, Polygon Law of Forces; Lami's Theorem, Equilibrium of a Body Under Two/ Three/More than Three Forces; Law of Superposition of Forces.

UNIT III

09 Hrs.

Analysis of Truss Structure: Introduction to Truss system, Types of trusses, Analysis of Truss using Joint Method.

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			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
DTCE 101	BEC	Applied Mechanics	60	20	20	30	20	2	1	2	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit.

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UNIT IV

09 Hrs.

Centre of Gravity: Centroid; Centre of Gravity; Determination of Centroid of Simple Figures; Centroid of Composite Sections.

Moment of Inertia: Basic Concept of Inertia, Definition of Moment of Inertia, Theorems of Moment of Inertia and Radius of Gyration.

UNIT V

09 Hrs.

Beams: Types of Beams, Simply Supported Beam, Overhanging Beam, Cantilever Beam; Types of supports of a beam or frame: Roller, hinged and fixed supports; Load on the beam; Different types of loading; Support reaction of a beam for point and uniformly distributed load.

Textbooks:

1. Engineering Mechanics, K.K Dwivedi, Dhanpat Rai Publications Pvt Ltd. 2020
2. Engineering Mechanics, Bhankar Bharat Gokaldas, Vandana Somkuwar, Khanna Book Publishing, 2021
3. A Textbook of Engineering Mechanics, R.S. Khurmi, N. Khurmi, S Chand Publishing, 2018.

Reference Books:

1. A Textbook of Applied Mechanics, R.K. Rajput, Laxmi Publications, 2016.
2. Engineering Mechanics, S.P, Timoshenko, Engineering Mechanics, McGraw Hill Education.
3. Engineering Mechanics: Statics & Dynamics, R.C. Hibbler, Pearson Education.

List of Practical's:

1. To verify the law of Triangle of forces
2. To verify the Lami's theorem.
3. To verify the law of parallelogram of forces.
4. To verify law of polygon of forces
5. To determine support reaction and shear force at a given section of a simply Supported beam and verify in analytically using parallel beam apparatus.
6. To determine the moment of inertia of fly wheel by falling weight method.
7. To verify bending moment at a given section of a simply supported beam.
8. Study of Various Beams and their Loading conditions

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			THEORY			PRACTICAL			L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*					
DTME205	BEC	MECHANICAL MEASUREMENT	60	20	20	30	20	2	0	2	3	

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

1. Develop fundamental understanding of mechanical measurements
2. Impart knowledge of measurement concepts and their practice.
3. Develop knowledge of measurement errors and their causes.

Course Outcomes (COs):

After learning the course the students should be able to:

- (1). Students will describe basic concepts of mechanical measurement
- (2). Students will understand linear and angular measuring instruments for measurement of various components
- (3). Students will be able to measure force and torque
- (4). Students will be able to measure temperature, pressure and surface finish.

Syllabus

Unit – I

9 Hrs

Mechanical Measurement

Need of mechanical measurement, Basic Terminology and Definition: Measurement methods, Generalized Measurement system, limit-gauging, various systems of limits, fits and tolerance, ISI and ISO system, Errors and their classification.

Unit – II

9Hrs

Linear Measurements:

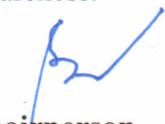
Linear Measurement Instruments, Vernier calliper, Micrometer, Interval measurements: Slip gauges, checking of slip gauges for surface quality, limit gauges.

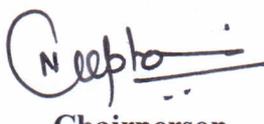
Unit – III

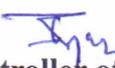
9 Hrs

Angular Measurements:

Angular measuring instruments; sine bar, angle gauges; spirit level, measurement of straightness, flatness and squareness.


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			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
DTME205	BEC	MECHANICAL MEASUREMENT	60	20	20	30	20	2	0	2	3

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

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Unit – IV

8 Hrs

Measurement of Force and Torque:

Force measurement: load cells, cantilever beams, proving rings, differential transformers. Measurement of torque: Torsion bar dynamometer, servo controlled dynamometer, absorption dynamometers, Power Measurements.

Unit - V

9 Hrs

Temperature Measurement:

Temperature Measuring Devices: Thermocouples, Resistance Temperature Detectors, Thermistor, Liquid in glass Thermometers, Pressure Thermometers, Pyrometer.

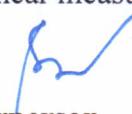
Pressure Measurement: Relative pressure scales, pressure reference instruments, barometer, manometer, pressure gauges and transducers etc.

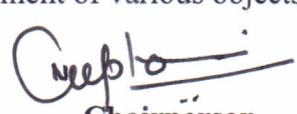
Text and Reference Books:

1. Engineering Metrology and Measurement, N V Raghavendra and Krishnamurthy, Oxford University Press, 2013.
2. Metrology and Measurement, Anand Bewoor & Vinay Kulkarni McGraw-Hill, 2009.
3. Instrumentation, Measurement and Analysis, B.C. Nakra, K.K. Chaudhry McGraw-Hill, 2017.
4. A course in Mechanical Measurements and Instrumentation, A K Sawhney, Dhanpat Rai Publications, 2005.
5. Mechanical Measurement and Metrology by R K Jain, Khanna Publisher, 1994.

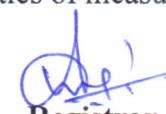
List of Experiments:

1. Basic understanding of measurements: concepts, application, advantage and future aspects
2. Linear measurement of various objects and check different characteristics of measurements.


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Diploma in Mechanical Engineering
SEMESTER II (2024-2027)

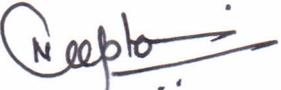
COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
DTME205	BEC	MECHANICAL MEASUREMENT	60	20	20	30	20	2	0	2	3

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

3. Angular measurement of various objects and check different characteristics of measurements.
4. Temperature measurements and check different characteristics of measurements and also do calibration.
5. Performance on surface measurements


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			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
DTME105	BS	Material Science	60	20	20	0	0	3	0	0	3

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

The subject aims to provide the student with:

1. An understanding of basic material science and properties of engineering materials.
2. To familiarize with crystal structure and alloying and heat treatment.

Course Outcomes (COs):

Students will able to:

1. Understand classification of materials and their properties.
2. Understand the characteristics of ferrous and non ferrous materials and their alloys
3. Understand the crystal geometry, structure and defects.
4. Understand the phase diagrams and phase transformations
5. Understand the heat treatment processes and applications.

Syllabus

Unit-I

(9 Hrs)

Introduction to material science and engineering materials, Need of engineering materials, Scope engineering materials, classification of engineering materials and their physical, chemical, thermal, mechanical properties, Introduction of advance materials.

Unit-II

(8 Hrs)

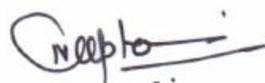
Ferrous and Non-Ferrous Metals: Ferrous materials and it characteristics, various types of steels and cast irons, alloys of steels and cast-irons, Non-ferrous metals: properties of copper and its alloys, Aluminium and its alloys.

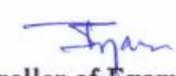
Unit-III

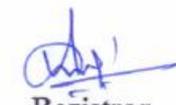
(9 Hrs)

Crystal geometry, structure and defects: crystalline, polycrystalline and amorphous materials, lattice points and space lattice, unit-cell, coordination number, types of crystal structures and crystal systems, atomic packing factor, miller indices, imperfections in crystals.


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DTME105	BS	Material Science	60	20	20	0	0	3	0	0	3

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Unit-IV

(9 Hrs)

Phase diagrams and phase transformations: important terms, solid solutions, phase diagram, Gibbs Phase rule, cooling curve, lever rule, equilibrium diagrams, Iron-Carbon phase equilibrium diagram.

Unit-V

(9 Hrs)

Heat Treatment: Various applications of heat treatment, heat treatment processes; Annealing, Normalizing, Hardening, Quenching, Tempering and various case hardening processes.

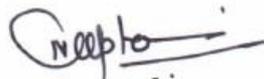
Text Books:

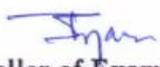
1. Rajput, R. K. (2008). Engineering Materials. New Delhi: S. Chand & Co. Ltd. .
2. Dogra , D., & Sharma , A. (2012). Engineering Materials & Metallurgy. S.K. Kataria & Sons.
3. Ashby, M. F. (Third edition 2006). Engineering Materials Volume-2: An Introduction to Microstructures, Processing and Design. Burlington: Butterworth-Heinemann.
4. Manchanda , V. K. (1999). Textbook Of Materials Science. New India Publishing House.
5. Choudhury S. H. (1978). Materials Science and Processes. Indian Book Distributing.

Reference Books:

1. Basu, D. (2001). Dictionary of Material Science & High Energy Physics. CRC Press.
2. Singh, I. P. (2018). Materials Science And Engineering. JAIN BROTHERS.
3. Callister, W. D., & Rethwisch, D. G. (2018). Materials Science and Engineering: An Introduction, 10th Edition. John Wiley & Sons, Inc.
4. G.K. Narula et al. "Material Science", McGraw Hill education (India) Pvt. Ltd, 2010.


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HUMANITIES

For Diploma (Engineering all branches)

Semester II

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
DTHU101	-	Communication Skills	0	0	0	30	20	0	0	4	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course educational Objectives (CEOs): The students will be

- **CEO1** Learn the different nuances of communication.
- **CEO2** Understand the features of listening and reading skills.
- **CEO3** Develop competency in professional communication.
- **CEO4** Study the essential aspects of effective written communication through Business letters and email writing for professional success.
- **CEO5** re-engineer their attitude and understand its influence on behaviour.

Course Outcomes (Cos): The students will be able to

- **CO1** Develop a comprehensive understanding of the theoretical and practical aspects of communication.
- **CO2** Understand and the different aspects of listening and reading.
- **CO3** Demonstrate different strategies for using professional communication skills
- **CO4** Draft effective business correspondence (letters) with brevity and clarity depending on the various prescribed formats.
- **CO5** acquire communication, Problem solving skills, Negotiation and Time management skills

COURSE CONTENTS:

UNIT I

Introduction to LSRW skills, Art of Communication, Basic Soft skills, Body Language at workplace.

UNIT II

Reading Comprehension:

Short Stories: 1. A Letter to God 2. An Astrologer's Day

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HUMANITIES

For Diploma (Engineering all branches)

Semester II

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
DTHU101	-	Communication Skills	0	0	0	30	20	0	0	4	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

UNIT III

Interviewing Skills –Role of Interviewer and Interviewee, Types of interviews, Types of Interview Questions

UNIT IV

Business Correspondence: Business Letter, Parts & Layouts of Business Resume and Job application, E-mail writing.

UNIT V

Problem Solving, Negotiation Skills, Time Management, Anger and Stress Management.

Suggested Readings

- Ashraf Rizvi.(2005). *Effective Technical Communication*. New Delhi: Tata Mc Graw Hill
- Adair, John (2003). *Effective Communication*. London: Pan Macmillan Ltd.
- A.J. Thomson and A.V. Martinet(1991).*A Practical English Grammar*(4th ed). Newyork: Oxford IBH Pub.
- Fuentes,G.L. (2020). *A Letter to God*. First Flight. CBSE,.
- Kratz, Abby Robinson (1995). *Effective Listening Skills*. Toronto: ON: Irwin Professional Publishing.
- Narayan, R.K. *An astrologer’s Day*. (1994).The Astroloers Day and other stories, Penguin Books,
- Prasad, H. M.(2001) *How to Prepare for Group Discussion and Interview*. New Delhi: Tata McGraw-Hill.
- Pease, Allan. (1998).*Body Language*. Delhi: Sudha Publications.

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Choice Based Credit System (CBCS) in the Light of NEP-2020
Diploma (All Branch) w.e.f. 2024 batch

COURSE-CODE	CATE-GORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
DTET201		Computer Basics	0	0	0	30	20	0	0	2	1

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based on following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

The subject introduces the fundamentals of computer system for using various hardware and software components. An exposure to fundamentals of computer programming is very essential for all diploma holders. This course is intended to make new students comfortable with computing environment - learning basic computer skills, learning basic application software tools, understanding computer hardware.

Course Outcomes (COs):

After completion of this course the students will be able to:

1. Identify the various components of a computer system.
2. Differentiate between hardware and software part of the computer.
3. Comfortably work on computer, install and configure OS, assemble a PC and connect it to External devices, write documents, create worksheets, prepare presentations etc.

Syllabus

UNIT I

9 Hrs.

Introduction to Computer Fundamentals: Brief history of development of computers, Basic Applications of Computer, Software and hardware, Computer block diagram, Classification of Computers, Components of Computer System, Computer architecture.

UNIT II

8 Hrs.

Basics of Operating System: Operating system concepts, purpose and functions, Operations of Windows OS, Creating shortcut of application on the desktop, Overview of control Panel, Taskbar, Applications in windows (Paint, Notepad, WordPad, Calculator)

UNIT III

8 Hrs.

Introduction to Internet: Basic of Computer networks: LAN, WAN and MAN. Concept of Internet, Applications of Internet.

UNIT IV

9 Hrs.

Introduction to Office: MS-Word: Introduction, Starting Word Screen and its Components, Elementary Working with Word Processing Software.

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			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
DTET201		Computer Basics	0	0	0	30	20	0	0	2	1

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based on following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

MS-Excel: Introduction, Starting Spread Sheet, Basics of Spreadsheet, Spread Sheet Screen and its Components, Formatting in excel, Working with formulas, Printing worksheets.

MS-Power point: Introduction, Starting PowerPoint Presentation, Basics of PowerPoint, PowerPoint Screen and Its Components, Formatting in PowerPoint, Using Templates, Inserting charts, Inserting tables, Printing presentations.

UNIT V

9 Hrs.

Memory: Memory: Primary memory, types of memory: RAM & ROM: Static and Dynamic ROM, PROM, EPROM, EEPROM, Flash memory, Secondary memory: Harddisks, CD ROM, CD-R, CD-RW, DVD-R, DVD-RW, concepts of latest storage devices- Blu-ray disk, HVD.

Text Books:

1. V. Rajaraman, "Introduction to Computers", 6th Edition, Prentice-Hall India, 2015.
2. R.S. Salaria, "Computer Fundamentals", Khanna Publishing House, 1st Edition, 2017

References:

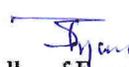
1. Anita Goel, "Computer Fundamentals", 1st Edition, Pearson Publication, 2010.
2. Sonal Abhyankar, "Emerging trends in Information Technology", Nirali Prakashan, 2014.

List of Experiment:

1. Identify the internal and external hardware/peripheral components.
2. Installation of operating system like Windows / Linux.
3. Creating and Formatting a Document in MS Word.
4. Working with Tables in MS Word.
5. Creating a Resume and Mail Merge in MS Word.
6. Basic Calculations in MS Excel.
7. Using Charts in MS Excel.
8. Using presentation tool, Create a simple Presentation consisting of 4-5 slides about Input and Output Devices or other content.
9. Email id creation, sending and receiving of email with attachments.
10. Create a Google form and analyze it.


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Shri Vaishnav Institute of Technology and Science
Choice Based Credit System (CBCS) in light of NEP-2020
Diploma in Mechanical Engineering
SEMESTER II (2024-2027)

COURSE CODE	CATE-GORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
DTME107	SEC	Workshop Practices II	0	0	0	30	20	0	0	4	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 20 marks.

Course Educational Objectives (CEOs):

The primary objectives of the course are to knowledge and skills of (A) Metal cutting and cutting tools (B) lathe machines and lathe operations on job (C) milling & milling operations (D) Welding Fabrication and CNC machines.

Course Outcomes: -

After completion of this course:

1. Students will be able to understand & describe metal cutting principles and cutting tools.
2. Students will be able to perform various lathe operations and make jobs.
3. Students will be able to perform milling operations and make jobs.
4. Students will be able to perform welding operations and fabricated jobs.

Syllabus

Unit-I

Introduction to Machine Tools: Introduction to metal cutting & cutting tools, Basic shape of cutting tool, types of cutting tools, geometry of single point cutting tool, tool materials, tool wear & cutting forces.

Unit-II

Lathe Machines: The centre lathe and its principle of working, Types of lathes, Lathe specification and size, Lathe operations, lathe cutting tools, capstan and turret lathes, their advantages and disadvantages over centre lathe, types of job done on them.

Unit-III

Milling Machines: Types of milling machines, constructional features of horizontal & vertical milling machine, types of milling cutters, milling operations like plane milling, space milling, angular milling form milling, straddle milling, gang milling, negative rake milling.

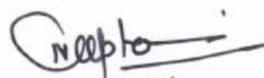
UNIT – IV

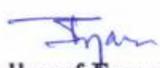
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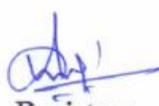
Shaper Machines: Purpose of shaping, functions of each part, work holding devices in shaper.

Drilling Machines: Purpose of drilling machines, types of drilling machines, work holding devices in drilling machines.


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SEMESTER II (2024-2027)

COURSE CODE	CATE-GORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
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			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
DTME107	SEC	Workshop Practices II	0	0	0	30	20	0	0	4	2

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UNIT - V

7 Hr.

Welding Fabrication: Introduction, welding terminology, safety measures, various types of welding, types of welding joints, welding positions, drawing interpretation, fabrication process, prepare jobs using arc welding and gas welding.

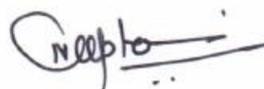
Text and Reference Books:

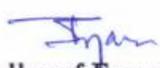
1. “Fundamentals of Metal Cutting and Machine Tools” by B.L. Juneja and G.S. Sekhon, New Age International, 2003.
2. “Metal Cutting Theory and Practice” by Bhattacharya, New Central Book Agency, 2000.
3. “Principles of Metal Cutting” by G. Kuppuswamy, Universities Press, 1996.
4. “Workshop Technology” by W. A. J. Chapman part I, II & III, 5th ed., 2001.
5. “Manufacturing Technology” by P. N. Rao, Vol. 1 and 2, 2018.
6. “Automation, Production Systems, and Computer-Integrated Manufacturing” by Mikell P. Groover, Pearson, 4th ed. 2015.
7. “Fundamentals of Machining and Machine Tools” by D.G. Boothroy and W.A. Knight, Marcel Dekker, NY, 2007.
8. “Elements of Workshop Technology” by Hazra Chaudhary Vol I, II, 12th ed., 2007.
9. “Mechanical Workshop Practice” by John K.C., 2nd Ed. PHI, 2010.

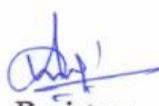
List of Experiments:

1. To study of single point cutting tool geometry
2. To study center lathe and compare with capstan and turret lathes.
3. To perform step turning and taper turning operations on the given work piece (Lathe Machine).
To perform thread cutting and knurling operation on the given work piece (Lathe Machine).
5. Study of milling machine
6. To machine a groove in the given work piece using vertical milling machine.
7. To make a job of various welding joints using the two M.S pieces by arc welding.
8. Fabricate a cubical box or three-piece elbow using arc welding.
9. Fabricate a simple job using gas welding.


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